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09/890,019	09/09/2001	Rainer Blum		5698

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EXAMINER

FEELY, MICHAEL J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/890,019	BLUM ET AL.	
	Examiner	Art Unit	
	Michael J Feely	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-17 and 19-25 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
☒ Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>0701, 0801</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Pending Claims

2. Claims 1 and 3-25 are pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

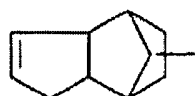
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
5. Claims 1, 3-17, and 19-25 are rejected under 35 U.S.C. 103(a) as being obvious over Blum et al. (US Pat. No. 6,288,146) in view of Blum et al. (US Pat. No. 6,313,250).

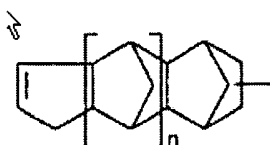
Regarding claims 1, 3-10, 17, and 19-25, Blum et al. ('146) disclose *(I)* a binder *composition* (Abstract) comprising (B) at least one polyester having a main chain that is at least

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one of saturated and unsaturated (column 2, lines 15-18), wherein (i) (B) has at least one of structural units I and II:



(I)



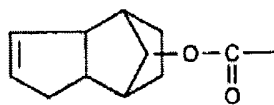
(II) in which the index n is an integer from 1 to 10; (column 2, lines 15-34) with the

proviso that (ii) when (B) contains no structural units I or II, (B) comprises at least one of maleic esters and fumaric esters incorporated in its main chain (column 2, lines 15-34: *structures are included*);

(4) wherein the polyester (B) comprises at least one of the structural units I and II and at least one of maleic esters and fumaric ester groups incorporated in its main chain (column 2, line 62 through column 3, line 14);

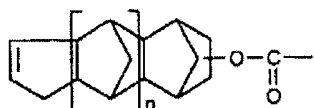
(9) wherein in the polyesters (B) the structural unit I is incorporated in the form of the structural unit III

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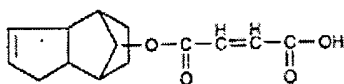
(III)

and the structural unit II is incorporated in the form of the structural unit IV

(IV) in which the index n is an integer from 1 to 10.

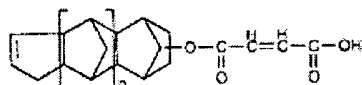
(column 2, lines 35-55);

(10) wherein in (B) the structural unit I is incorporated in the form of the structural unit V



(V)

and the structural unit II is incorporated in the form of structural units VI



(VI).

(column 2, line 62 through column 3,

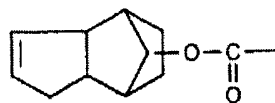
line 14);

(17) further characterized by at least *two* of the following:

ii) the polyester (B) comprises at least one of structural units I and II and at least one of maleic esters and fumaric ester groups incorporated in its main chain (column 2, line 62 through column 3, line 14);

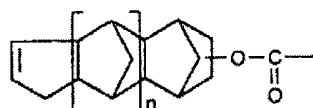
iv) in the polyesters (B), the structural unit I is incorporated in the form of the structural unit III

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(III)

and the structural unit II is incorporated in the form of the structural unit IV

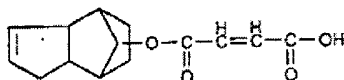


(IV) in which the index n is an integer from 1 to 10.

(column 2, lines 35-55; column 2, line

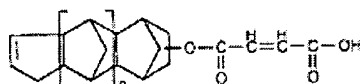
62 through column 3, line 14); and

v) in (B) the structural unit I is incorporated in the form of structural unit V



(V)

and the structural unit II is incorporated in the form of structural units VI



(VI).

(column 2, line 62 through column 3,

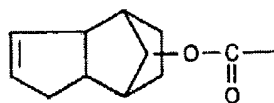
line 14); and

(21-25) further characterized by at least *one* of the following:

ii) the polyester (B) comprises at least one of structural units I and II and at least one of maleic esters and fumaric ester groups incorporated in its main chain (column 2, line 62 through column 3, line 14);

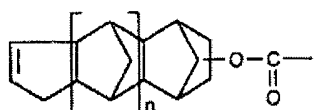
iv) in the polyesters (B), the structural unit I is incorporated in the form of the structural unit III

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(III)

and the structural unit II is incorporated in the form of the structural unit IV

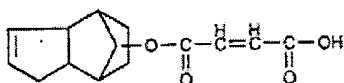


(IV) in which the index n is an integer from 1 to 10.

(column 2, lines 35-55; column 2, line

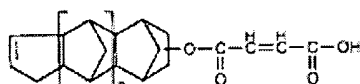
62 through column 3, line 14); and

v) in (B) the structural unit I is incorporated in the form of structural unit V



(V)

and the structural unit II is incorporated in the form of structural units VI



(VI).

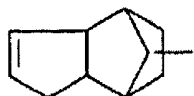
(column 2, line 62 through column 3,

line 14).

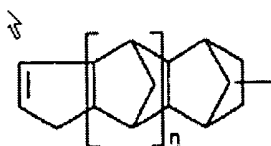
Blum et al. disclose, "*The binders can additionally comprise, moreover, known unsaturated reactive diluents, if appropriate in minor amounts;*" (column 4, lines 5-8) however, they do not disclose the use of a compound corresponding to polymer (A) of the instant claims.

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Blum et al. ('250) disclose **(I)** a binder *composition* (Abstract) comprising (A) at least one polymer with a saturated main chain that is not polyester and wherein, (i) (A) has at least one of structural units I and II,



(I)



(II) in which the index n is an integer from 1 to 10; (column 1, lines 44-62) with the proviso that

(iii) when (A) contains not structural unit I or II, (A) comprises covalently bonded photoinitiators of the Norrish II type as the at least one of side groups and end groups (column 1, lines 44-62: *structures are included*);

(3) wherein the polymer (A) comprises at least one structural unit I and II and also at least one covalently bonded photoinitiator of the Norrish II type as at least one of a side group and end group (column 1, lines 44-62; column 5, lines 1-9);

(5-8) wherein the polymer (A) comprises at least one of polyacrylate, polyurethane, polyether, and polyepoxide (column 1, lines 44-62; column 2, lines 44-67);

(7 & 19) wherein the polyurethanes (A) comprise the reaction products of polyisocyanates, compounds comprising isocyanate-reactive groups (column 1, lines 44-62; column 2, lines 44-67: *inherent precursors for polyurethanes*), and at least one of the following:

i) compounds comprising at least one structural unit I and at least one isocyanate-reactive group (column 1, line 63 through column 2, line 67),

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ii) compounds comprising at least one structural unit II and at least one isocyanate-reactive group (column 1, line 63 through column 2, line 67),

iii) compounds comprising at least one structural unit I, at least one structural unit II, and at least one isocyanate-reactive group (column 1, line 63 through column 2, line 67), and

iv) compounds having at least one photoinitiator group and at least one isocyanate-reactive group (column 1, line 63 through column 2, line 67; column 5, lines 1-9);

(8 & 20) wherein the polyepoxides (A) comprise reaction products of polyepoxides (column 1, lines 44-62; column 2, lines 44-67) and at least one of

i) compounds comprising at least one structural unit I and at least one epoxide-reactive group (column 1, line 63 through column 2, line 67),

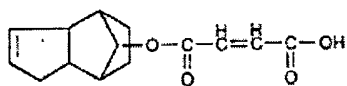
ii) compounds comprising at least one structural unit II and at least one epoxide-reactive group (column 1, line 63 through column 2, line 67),

iii) compounds comprising at least one structural unit I, at least one structural unit II, and at least one epoxide-reactive group (column 1, line 63 through column 2, line 67), and

iv) compounds having at least one photoinitiator group and at least one epoxide-reactive group (column 1, line 63 through column 2, line 67; column 5, lines 1-9);

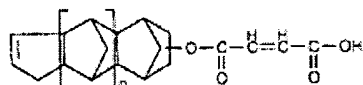
(10) wherein in (A) the structural unit I is incorporated in the form of the structural unit V

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(V)

and the structural unit II is incorporated in the form of structural units VI



(VI).

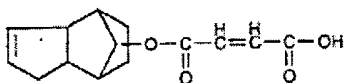
(column 2, lines 45-67);

(17) further characterized by at least *two* of the following:

i) the polymer (A) comprises at least one structural unit I and II and also at least one covalently bonded photoinitiator of the Norrish II type as at least one of a side group end group (column 1, line 63 through column 2, line 67; column 5, lines 1-9),

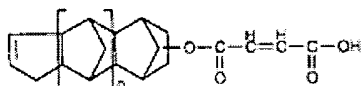
iii) the polymer (A) comprises at least one of polyacrylate, polyurethane, polyether, and polyepoxide (column 1, lines 44-62; column 2, lines 44-67), and

v) in polymer (A), the structural unit I is incorporated in the form of the structural unit V



(V)

and the structural unit II is incorporated in the form of structural units VI



(VI).

(column 2, lines 44-67); and

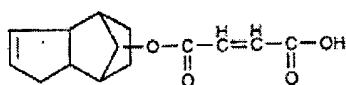
(21-25) further characterized by at least *one* of the following:

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i) the polymer (A) comprises at least one structural unit I and II and also at least one covalently bonded photoinitiator of the Norrish II type as at least one of a side group end group (column 1, line 63 through column 2, line 67; column 5, lines 1-9),

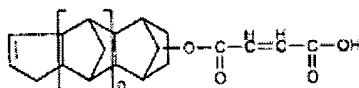
iii) the polymer (A) comprises at least one of polyacrylate, polyurethane, polyether, and polyepoxide (column 1, lines 44-62; column 2, lines 44-67), and

v) in polymer (A), the structural unit I is incorporated in the form of the structural unit V



(V)

and the structural unit II is incorporated in the form of structural units VI



(VI).

(column 2, lines 44-67).

It should be noted that Blum et al. do not teach the polyacrylate limitations set forth in claim (6); however, the claim language remains open to all members of the Markush group set forth in claim 5. Accordingly, the limitations of claim 6 are satisfied because the limitations of claim 5 are satisfied.

Blum et al. disclose, “*The substances of this invention can be used in combination with unsaturated polyesters, in which case they can wholly or partially replace the reactive diluents custom with unsaturated polyesters;*” (column 5, lines 60-63). In light of the other Blum et al. reference, this polymer would appear to be a logical fit for the binder composition, wherein, “The binders can additionally comprise, moreover, known unsaturated reactive diluents, if appropriate in minor amounts.”

Blum et al. effectively establish that polymer (A) is known as a suitable reactive diluent for binder compositions featuring unsaturated polyesters. In light of this, it has been found that the selection of a known material based on its suitability for its intended use is *prima facie* obvious – *see MPEP 2144.07*.

Therefore it would have been obvious to combine polymer (A) of Blum et al. ('250) with the binder composition (featuring polymer (B)) of Blum et al. ('146) because Blum et al. ('250) establish that polymer (A) is a known suitable reactive diluent for the binder composition of Blum et al. ('146).

The combined teachings of Blum et al. ('250) and Blum et al. ('146) are as set forth above and incorporated herein.

Regarding claims 12-15, the combined teachings of Blum et al. ('205) and Blum et al. ('146) disclose:

(12) a method of using the binder mixture of claim 1 comprising preparing coating materials comprising the binder mixture of claim 1, wherein the coating materials are curable by at least one of thermally and with actinic radiation ('205: column 5, lines 40-50; '146: column 3, lines 39-46);

(13) a coating material comprising the binder mixture of claim 1, wherein the coating material is curable by at least one of thermally and with actinic radiation ('205: column 5, lines 40-50; '146: column 3, lines 39-46);

(14) a method of using the coating material as claimed in claim 13 comprising applying the coating material to a substrate ('205: column 6, lines 11-18; '146: column 8, lines 24-34) and curing the coating material by at least one of thermally and with actinic radiation ('205: column 5, lines 40-50; '146: column 3, lines 39-46);

(15) a method of coating substrates for at least one of an automotive OEM finish, an automotive refinish, an industrial coating, a coil coating, a container coating, and a furniture coating comprising applying the coating material of claim 13 to the substrate ('205: column 6, lines 11-18; '146: column 8, lines 24-34) and curing it by at least one of thermally and with actinic radiation ('205: column 5, lines 40-50; '146: column 3, lines 39-46); and

(16) a substrate coated by the method of claim 15 ('205: column 6, lines 11-18; '146: column 8, lines 24-34).

Regarding claim 11, the combined teachings of the Blum et al. references disclose "minor amounts" of polymer (A) with respect to polyester (B); however, they do not disclose (II) a ratio range of 99.5:0.5 to 0.5:99.5 (A:B). Applicant fails to show criticality for this range (see page 33, lines 4-9 of the Specification), and the upper limit appears to fit the description of "minor amounts".

Furthermore, the quantity of the reactive diluent with respect to polyester (B) is a result effective variable: too little would not effectively change the overall viscosity, while too much would have too drastic of an effect on the overall viscosity. In light of this, it has been found that, "where the general conditions of a claim are disclosed in the prior art, it is not inventive to

discover the optimum or workable ranges by routine experimentation,” – *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to use a ratio of polymer (A) to polyester (B) in the range of 99.5:0.5 to 0.5:99.5 in the combined teachings of Blum et al. (‘250) and Blum et al. (‘146) because the upper limit of this range appears to fit the description of “minor amounts of reactive diluent” (polymer A), and it has been found that where the general conditions of a result effective variable are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.

6. Claims 1, 3-17, and 19-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blum et al. (WO 97/25387) in view of Blum et al. (WO 97/25365).

7. WO 97/25387 is published in German; however, it has a US equivalent: US Pat. No. 6,288,146. WO 97/25365 is also published in German; however, it too has a US equivalent: US Pat. No. 6,313,250. These US equivalent documents have been relied upon as translation documents. Accordingly, the rejection of claims 1, 3-17, and 19-25 under 35 U.S.C. 103(a) as being unpatentable over Blum et al. (US Pat. No. 6,288,146) in view of Blum et al. (US Pat. No. 6,313,250) is as set forth above and incorporated herein to meet the limitations of claims 1, 3-17, and 19-25.

Allowable Subject Matter

8. Claim 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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9. The following is a statement of reasons for the indication of allowable subject matter:

Claims 18: is directed to an embodiment of the instant invention where *polymer (A)* is a *polyacrylate and comprises at least one copolymeric poly(meth)acrylate comprising in copolymerized form at least one (meth)acrylate monomer comprising at least one structural unit I, structural unit II, further (meth)acrylic esters, and further olefinically unsaturated monomers copolymerizable therewith.* Blum et al. (US Pat. No. 6,313,250) teaches various embodiments of polymer (A); however, they fail to teach or suggest this specific embodiment.

International Search Report

10. The international search report cited two X references: DE 19600136 and DE 19600152. The US and WIPO equivalents of DE 19600152 (US Pat. No. 6,288,146 and WO 97/25387) have been applied as prior art in the instant Office action. DE 19600136 has been considered; however, it does not appear to apply to the instant invention.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references teach polyester resin related to the polyester resin (B) of the instant invention: US Pat. No. 6,200,645; US Pat. No. 6,162,840; and US Pat. No. 6,165,557. The following reference teaches a polymer related to the polymer (A) of the instant invention: US Pat. No. 6,133,337. The following references are related to the instant invention: US Pat. No. 6,541,535 and US Pat. No. 6,632,481; however, they do not qualify as prior art.

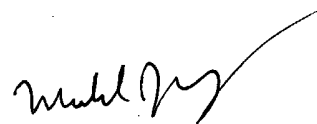
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Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael J. Feely
Patent Examiner
Art Unit 1712

July 16, 2004